



Dr Fisher presented her poster, 'Community acquired medication use at end-of-life: A descriptive analysis of a cohort of older persons with colorectal cancer' at the 18th International Congress on Palliative Care in Montreal, QC, October 5-8, 2010 and at the Beatrice Hunter Cancer Research Institute (BHCRI) Cancer Research Symposium in Halifax, NS, November 8-9, 2010.

## Thank you to Judith Fisher, Post Doctoral Fellow

Dr Judith Fisher was the NELS ICE post-doctoral fellow from January 2009 to December 2010. She established ICE Project 9, 'Medications Use at End of Life'. Judith was cosponsored by the Initiative for Medication Management Policy Analysis, Research and Training (IMPART) at the College of Pharmacy, Dalhousie University. IMPART's chair, Dr Ingrid Sketris, played a vital role in mentoring Judith during her fellowship. Judith will continue with IMPART as a post doctoral fellow in partnership with Cancer Care Nova Scotia in 2011. The IMPART Chair is funded by the Canadian Health Services Research Foundation (CHSRF), the Canadian Institutes for Health Research (CIHR) and the Nova Scotia Health Research Foundation (NSHRF).



Dr Sketris, IMPART, College of Pharmacy, Dalhousie.

Judith developed end of life research on medication use by using existing databases including Pharmicare and the Nova Scotia Prescription Monitoring Program. She also examined factors that describe persons dying of Alzheimer's disease.

"The past two years have presented both challenges and tremendous opportunities for professional and personal growth," says Judith. "I am grateful for the assistance and generosity of all my colleagues who have made me feel welcome in Halifax, at Cancer Care Nova Scotia, at Dalhousie University and as a member of the NELS team. In particular, I wish to express my appreciation and thanks to Dr Grace Johnston and Dr Ingrid Sketris for their guidance and outstanding mentorship. Their encouragement and wisdom, and the ongoing support of both the NELS team and the IMPART team have made my time as a post-doctoral fellow an exciting and rewarding experience."

Judith completed her PhD in Pharmaceutical Sciences at the University of Toronto and her MA in Gerontology at Simon Fraser University. Prior to her graduate studies, she worked for 20 years as a community pharmacist in Ontario and British Columbia.

*NELS thanks Judith for her work and wishes her all the best in reaching her career and life goals.*

## Publications and presentations on medication from Judith Fisher's post-doctoral fellowship

### Publications:

Maddison A, **Fisher JE**, Johnston G. (2011). *Preventive medication use among persons with limited life expectancy: A review of the literature.* [In press, Progress in Palliative Care].

**Fisher JE**, Sanyal C, Frail D, Sketris I. (2011). *The intended and unintended consequences associated with benzodiazepine monitoring programs: A review of the literature.* [In press, The Journal of Clinical Pharmacy and Therapeutics].

**Fisher JE**. (2010). *Community-acquired medication use at end of life: A descriptive analysis of a cohort of older persons with colorectal cancer.* Journal of Palliative Care, 26(3), 239.

**Fisher JE**, Johnston, GM. (2010). *Dying with and from Alzheimer's disease in Nova Scotia 1998 – 2005: A descriptive analysis of death certificate data.* Journal of Palliative Care, 26(3), 238.

### Presentations:

**Fisher J**, Sanyal C, Frail D, Sketris I. (2010). *A synthesis of knowledge related to the inclusion of benzodiazepines in Prescription Monitoring Programs.* 2010 Knowledge Utilization Colloquium, Halifax, NS, Jun 10-11.

**Fisher J**, Zhang Y, Sketris I, Johnston G, Burge F. (2010) *The effect of an educational intervention on meperidine use in Nova Scotia: A time-series analysis.* Nova Scotia Prescription Monitoring Program, Dec 5 and Drug Evaluation Alliance of Nova Scotia (DEANS), Jan 12.

**Fisher J**. (2009) *Nova Scotia Prescription Monitoring Program (NSPMP): Promoting appropriate use of controlled substances.* Invited presentations: NSPMP Drug Utilization Committee (Nov 4) and the NSPMP Board (Nov 19).

**Fisher J**, Sanyal C, Frail D, Sketris I. (2009). *Benzodiazepine use in prescription monitoring programs: a review of the literature.* Association of Faculties of Pharmacy of Canada Conference, Halifax, NS, Jun 3-6.

This issue of NELS News features work surrounding ICE Project 9, 'Medication Use at End of Life'.

To receive future issues of NELS News, please e-mail [nels@dal.ca](mailto:nels@dal.ca).

## Medication use for persons with colorectal cancer at end of life

Medication use at end of life for individuals with colorectal cancer is very complex, in particular during the last 26 weeks prior to their death. NELS ICE post-doctoral fellow, Dr Judith Fisher, has completed a project analysing medication use for this population of Nova Scotians. To understand the complexities of colorectal cancer patients at end of life, she's collaborated with Team ACCESS (Access to Colorectal Cancer Services), a research group with the goal to improve colorectal cancer care in Nova Scotia. Team ACCESS is funded by a CIHR New Emerging Team (NET) Grant.

Managing symptoms like pain, nausea and anxiety is a key component to end of life care. Opioid medications such as morphine or hydromorphone are often prescribed to manage moderate to severe cancer pain. Access to these appropriate medications

is likely to impact an individual's ability to stay out of hospital and stay in the community for their end of life care.

Nova Scotia Pharmacare Program data was analysed to better understand end of life medication use by individuals who were diagnosed with colorectal cancer from January 2001 to December 2005, died between January 2001 and April 2008 and were age 66 years and over at diagnosis.

Only prescribed and filled medications which are covered under Pharmacare benefits are included in the study. This is a limitation as actual medication use is not captured. Medications acquired in-hospital and by other prescription insurance such as Department of Veterans' Affairs, non-insured Health Benefits for First Nations, private insurance and out-of-pocket payment are not included.

Medications prescribed in the 26 weeks prior to an individual's death were identified. On average, individuals were filled prescriptions for 3 different types of medications. The average number of medications for women (3.5) was greater than that of men (2.6). Long-term care residents on average had 3.5 different medications types compared to non-residents which had 2.9 on average. It was noted that the age of an individual was negatively associated with the number of different medication prescriptions they were filling.

Table 1 shows that almost 39 per cent of individuals had prescriptions filled for plain opioids which include hydromorphone, morphine, oxycodone, fentanyl and meperidine (Table 2). Psychotropic medications filled, including anxiolytics, sedative hypnotics, antidepressants and antipsychotics, are depicted in Table 3. Gastrointestinal agents were the highest filled prescriptions with 40 percent. These medications include proton pump

*(continued on page 3)*

Table 1: Medication use in 26 weeks prior to death

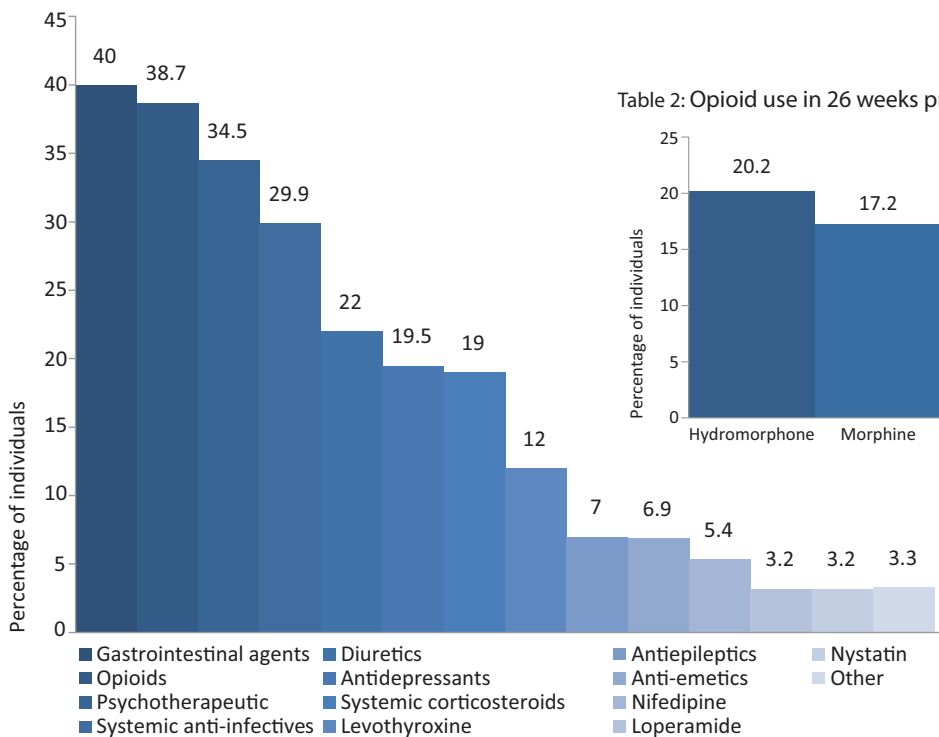
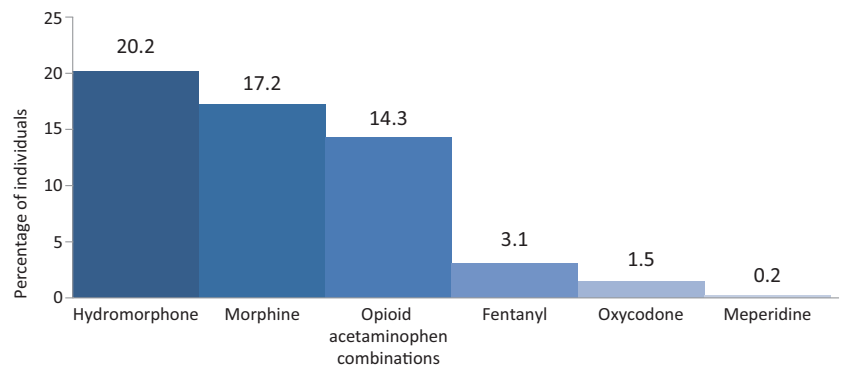


Table 2: Opioid use in 26 weeks prior to death



Medication use for persons with colorectal cancer at end of life

(continued from page 2) inhibitors and histamine-2 antagonists (H2RA) (Table 4).

Only one-third of individuals filled prescriptions for plain opioids which highlights potential unmet needs during end of life care in this population. This issue was particularly noted among the oldest colorectal cancer patients, males and individuals who were not diagnosed until their cancer was in an advanced stage. Individuals with lower rates of plain opioid

use in the community have a higher rate of in-hospital death. This highlights the important role of access to appropriate pain management in the provision of community based end of life care. There was a positive association between plain opioid use and three factors: long term care residency, cause of death being colorectal cancer vs other causes of death, increased

number of days between a person's diagnosis and death. A strong association between enrollment in a Nova Scotian district palliative care program and opioid use was also seen.

Multivariate analyses to examine factors associated with the use of specific classes of medication is being prepared for publication.

Table 3: Psychotherapeutic agents, including antidepressants, in 26 weeks prior to death

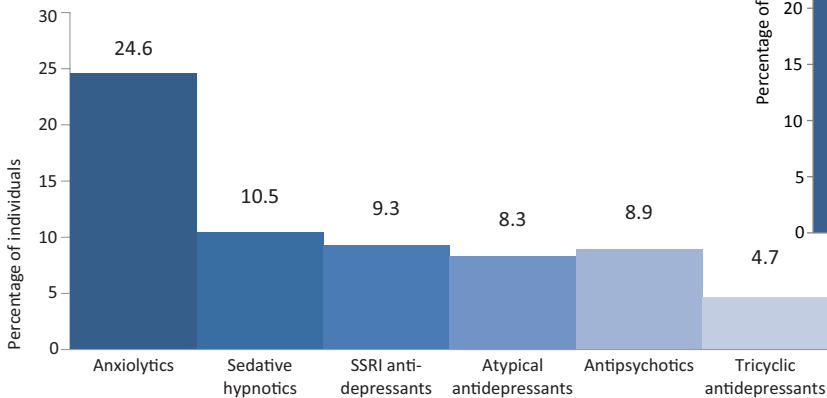
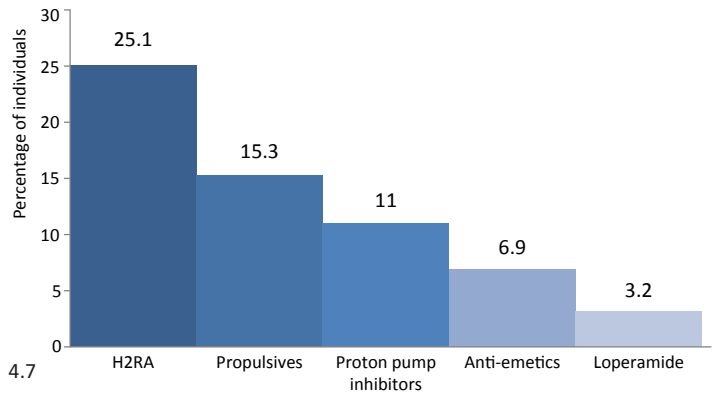


Table 4: Gastrointestinal agents in 26 weeks prior to death



Nova Scotia Prescription Monitoring Program (NSPMP)

During the summer of 2009, Dr Judith Fisher worked with the NSPMP as part of the IMPART Drug Use Management and Policy Research Residency Program. One component of Judith's residency was an evaluation of a NSPMP intervention designed to reduce the use of meperidine in Nova Scotia.

Judith's work led to a follow-up study, an evaluation of this intervention using interrupted time-series analyses, in collaboration with Drs Ingrid Sketris, Grace Johnston and Fred Burge (Dalhousie University), and Ying Zhang (Acadia University). These analyses have been completed and a manuscript is in preparation. Judith presented the results of this study on December 5, 2010 at the NSPMP and at the January 12, 2011 meeting of the Drug Evaluation Alliance of Nova Scotia (DEANS).

Work with the NSPMP continued in the summer of 2010, as Judith, Grace and Ingrid worked with Roderick Clark, the 2010 Drug Use

Management and Policy resident. Roderick's project examined trends in acetaminophen and opioid combination prescription within Nova Scotia. Roderick presented his work at the NSPMP on December 5, 2010, and on December 14, 2010 at the IMPART Drug Use Management and Policy Research Residency day. A publication based on this work is planned, as is further collaboration with NSPMP.



*The IMPART Drug Use Management and Policy Residency was funded by CHSRE, CIHR and NSHRF. The meperidine project was also funded by DEANS.*

Dr Fisher and Roderick Clark at the IMPART Drug Use Management and Policy Residency Presentations where Roderick presented his research on December 14, 2010.

## Preventive Medications at End of Life

NELS ICE trainee, André Maddison, completed a literature review on Preventive Medications at End of Life under the supervision of Judith Fisher and Grace Johnston. André completed his MSc in the Department of Community Health and Epidemiology at Dalhousie University in 2010 and is now attending Dalhousie Medical School.

The review summarizes the literature on preventive medication use by persons with a life expectancy of less than a year. These individuals are significant consumers of health care, have dynamic health statuses and are at an increased risk of polypharmacy and adverse drug events.

A significant proportion of persons with known terminal conditions continue to use chronic disease preventive medications such as statins and

bisphosphonates until death despite the questionable benefits they provide. In contrast, the addition of palliative preventive medication, such as laxatives with opioid use, is recommended. Since appropriate medication use for individuals at end of life needs to be evaluated regularly, frameworks to assess appropriate versus inappropriate use and the prevalence of potentially inappropriate use by these individuals is also presented. The literature indicates that the shift in goals of care from curative to palliative is reflected into a shift in medication use.

The review is the first step towards improving medication use and decreasing polypharmacy in persons at end of life. Further, there is a need for consensus criteria in assessing appropriate versus inappropriate medication use specifically for individuals at end of life.



André Maddison at the 2009 NELS ICE Poster Event in Halifax, NS on December 16, 2009.

“Preventive medication use among persons with limited life expectancy,” was developed and accepted for 2011 publication by *Progress in Palliative Care*.

### NEWS & EVENTS

#### Visiting Scholar - Mary Lou Kelley January 25 - 27, 2011

Mary Lou Kelley, Professor in the School of Social Work at Lakehead University, Thunder Bay, Ontario, will discuss her end of life research with rural and aboriginal communities and persons in long term care.

#### Tuesday, January 25

**2pm** - *Palliative and End of Life Care: Across Canada and in Nova Scotia Session* - Onsite at 5161 George St, Suite 700 and Online at <http://connectpro60301299.adobeconnect.com/seniorseminar>

#### Wednesday, January 26

**12pm** - *Palliative Care project in Long Term Care Homes* Hosted by Geriatrics - Room 1613A, Veterans' Memorial Bldg, HI Site, Capital Health

**2:30pm** - *Developing Rural Communities' Capacity for Palliative Care: a Conceptual*

*Model* - Room 544 Bethune Bldg, VG Site, Capital Health

**4pm** - *Building Interdisciplinary Research related to End of Life* - Room 544 Bethune Bldg, VG Site, Capital Health

#### Thursday, January 26

**9am** - *Improving End-of-Life Care in First Nations Communities* - Room 544 Bethune Bldg, VG Site, Capital Health.

Contact [nels@dal.ca](mailto:nels@dal.ca) to RSVP to an event, for more information or if you would like to meet with this NELS ICE visiting scholar.

#### NELS End of ICE Event December 2011

The ICE part of NELS will end in March 2012. To celebrate NELS successes during ICE and to share knowledge gained through the many studies and project streams, an *End of ICE* event is planned for December 2011. Details will be available in Spring 2011.

### UPCOMING ISSUES

Future issues of NELS News will continue to feature ICE Project Streams. Past issues of are available at <http://nels.dal.ca/nelsnews.html>.

NELS News questions and comments can be directed to the ICE Coordinator at [nels@dal.ca](mailto:nels@dal.ca).

### ACKNOWLEDGEMENT

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**NELS** | Network for End of Life Studies  
**ICE** | Interdisciplinary Capacity Enhancement